



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

MA

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/464,497	12/15/1999	MICHAEL A'HEARN	99-120-4	7647
7590	05/04/2005		EXAMINER	
J W BURROWS CATERPILLAR INC			LOPEZ, FRANK D	
PATENT DEPARTMENT			ART UNIT	PAPER NUMBER
AB 6490			3745	
100 N.E.ADAMS STREET				
PEORIA, IL 616296490			DATE MAILED: 05/04/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/464,497	A'HEARN ET AL.	
	Examiner	Art Unit	
	F. Daniel Lopez	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 31 January 2005.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1 and 4-8 is/are rejected.

7) Claim(s) 2,3 and 9-16 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

Response to Amendment

Applicant's arguments filed January 31, 2005, have been fully considered but they are not deemed to be persuasive.

Applicant's arguments with respect to claims 1 and 4-8 have been considered but are moot in view of the new ground(s) of rejection.

The limitation that "the second outlet port of the first directional control valve is in communication with the supply port thereof and with both the first outlet port and with a selected one of the first and second outlet ports of the second directional control valve" (claim 1 line 31-33) is understood to only mean that there is a fluid passage connecting the second outlet port of the first directional control valve with one of the outlet ports of the second directional control valve, for the reasons discussed below. When the first valve (78) is in the second position, the rod is moved to be further extended and all of the fluid flowing from the rod end port is flowing into the head end port, since the head end area is greater than the rod end area (i.e. the flow to the head end port is equal to the flow from the rod end port plus a volume from the pump via the inlet port). For the flow from the rod end to actually flow to the second directional control valve, this fluid must flow from the first directional control valve (78) to the second directional control valve (24), along a supply passage (17). Since the head end needs fluid from the pump, pump fluid is flowing in the supply passage, in the opposite direction from the flow of the rod end fluid to the second directional control valve. Since there is no possibility for the fluid to flow in both directions at the same time, as a practical matter, the flow from the rod end will not flow to the second directional control valve. Therefore, the above quoted limitation must only mean that there is a passage able to connect the rod end to the second valve.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Budzich 4,028,889 (see discussion below in the 103 rejection). When the directional control valve (10) is in the second position (spool 23 moved to the left), the second outlet port (25) fully communicates with the outlet port, through the valve, and with the supply inlet ports of both directional control valves, through a check valve (e.g. 60). Although applicant claims a single three position valve, the addition of the check valve in Budzich 4,028,889 has to meet the claimed limitations, since applicant's invention includes a check valve (104) which performs the same function.

Claim Rejections - 35 USC § 103

Claims 4-8 are rejected under 35 U.S.C. § 103 as being unpatentable over Budzich in view of Johnson. Budzich discloses a fluid system with a single source (12) of pressurized supply fluid that receives fluid from a reservoir (17), comprising first and second fluid circuits connected to the single source, having respecting first (e.g. 10) and second (e.g. 14) three position directional control valves connected to respective first (11) and second (15) cylinders having head end and rod end ports; wherein each directional control valve includes supply inlet (24), exhaust (27) and first and second outlet ports (26, 25) connected respectively to the supply source, reservoir, and head end and rod end ports of the respective cylinder; with each directional control valve movable from a central position to first, second and third operating positions, with the supply inlet, exhaust and first and second outlet ports blocked in the central position (fig 1), and with the supply inlet and exhaust ports communicating with the second and first outlet ports, respectively, in the first operable position (spool 23 moved to right); wherein when each directional control valve is in the second operable position (spool 23 moved to left), the supply inlet port fully communicates with the first outlet port, and the second outlet port fully communicates with the outlet port, through the respective valve, and with the supply inlet ports of both directional control valves, through a check valve (e.g. 60); but does not disclose first and second vented load check valves disposed between first and second outlet ports, respectively, of the first directional control valve, and head

Art Unit: 3745

end and rod end ports, respectively, of the first fluid cylinder; a pilot control system having a control input arrangement connected to a source of pressurized pilot fluid, with first and second directional control valves being movable from their center positions by pilot fluid directed through first, second, third and fourth pilot conduits; with first and second vented load check valves each having pressure chambers in communication with head end or rod end ports, respectively, through orifice conduits, and the pilot control system includes respective first and second two position valves, positioned between the respective pressure chamber and the reservoir, spring biased to a closed position and movable in response to pilot fluid directed to respective first and second ends of the first directional control valve; with a third and fourth vented load check valves disposed between first and second outlet ports, respectively, of the second directional control valve, and head end and rod end ports, respectively, of the second fluid cylinder; with third and fourth vented load check valves each having pressure chambers in communication with head end or rod end ports, respectively, through orifice conduits, and the pilot control system includes respective third and fourth two position valves, positioned between the respective pressure chamber and the reservoir, spring biased to a closed position and movable in response to pilot fluid directed to respective first and second ends of the second directional control valve.

Johnson teaches, for a fluid circuit having a directional control valve which includes supply inlet, exhaust and first and second outlet ports connected respectively to a supply source, reservoir, and head end and rod end ports of a cylinder; and movable from a central position to first and second operating positions, that there are first and second vented load check valves (20) disposed between first and second outlet ports, respectively, of the first directional control valve, and head end and rod end ports, respectively, of the first fluid cylinder; a pilot control system having a control input arrangement (22) connected to a source of pressurized pilot fluid, with the directional control valve being movable from its center position by pilot fluid directed through first and second pilot conduits (24, 26); with first and second vented load check valves each having pressure chambers (74) in communication with head end or rod end ports, respectively, through orifice conduits (82), and the pilot control system includes

Art Unit: 3745

respective first and second two position valves (90), positioned between the respective pressure chamber and the reservoir, spring biased to a closed position and movable in response to pilot fluid directed to respective first and second ends of the first directional control valve, for the purpose of preventing creep of the cylinder.

Since Budzich and Johnson are both from the same field of endeavor, the purpose disclosed by Johnson would have been recognized in the pertinent art of Budzich. It would have been obvious at the time the invention was made to one having ordinary skill in the art to add first and second vented load check valves disposed between first and second outlet ports, respectively, of the first directional control valve of the modified Budzich, and head end and rod end ports, respectively, of the first fluid cylinder; a pilot control system having a control input arrangement connected to a source of pressurized pilot fluid, with first and second directional control valves being movable from their center positions by pilot fluid directed through first, second, third and fourth pilot conduits; with first and second vented load check valves each having pressure chambers in communication with head end or rod end ports, respectively, through orifice conduits, and the pilot control system includes respective first and second two position valves, positioned between the respective pressure chamber and the reservoir, spring biased to a closed position and movable in response to pilot fluid directed to respective first and second ends of the first directional control valve; and add third and fourth vented load check valves disposed between first and second outlet ports, respectively, of the second directional control valve of the modified Budzich, and head end and rod end ports, respectively, of the second fluid cylinder; with third and fourth vented load check valves each having pressure chambers in communication with head end or rod end ports, respectively, through orifice conduits, and the pilot control system includes respective third and fourth two position valves, positioned between the respective pressure chamber and the reservoir, spring biased to a closed position and movable in response to pilot fluid directed to respective first and second ends of the second directional control valve, as taught by Johnson, for the purpose of preventing creep of the first and second cylinders.

Conclusion

Claims 2, 3 and 9-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571-272-4821. The examiner can normally be reached on Monday-Thursday from 6:15 AM -3:45 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is (703) 872-9302. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.



F. Daniel Lopez
Primary Examiner
Art Unit 3745
May 02, 2005